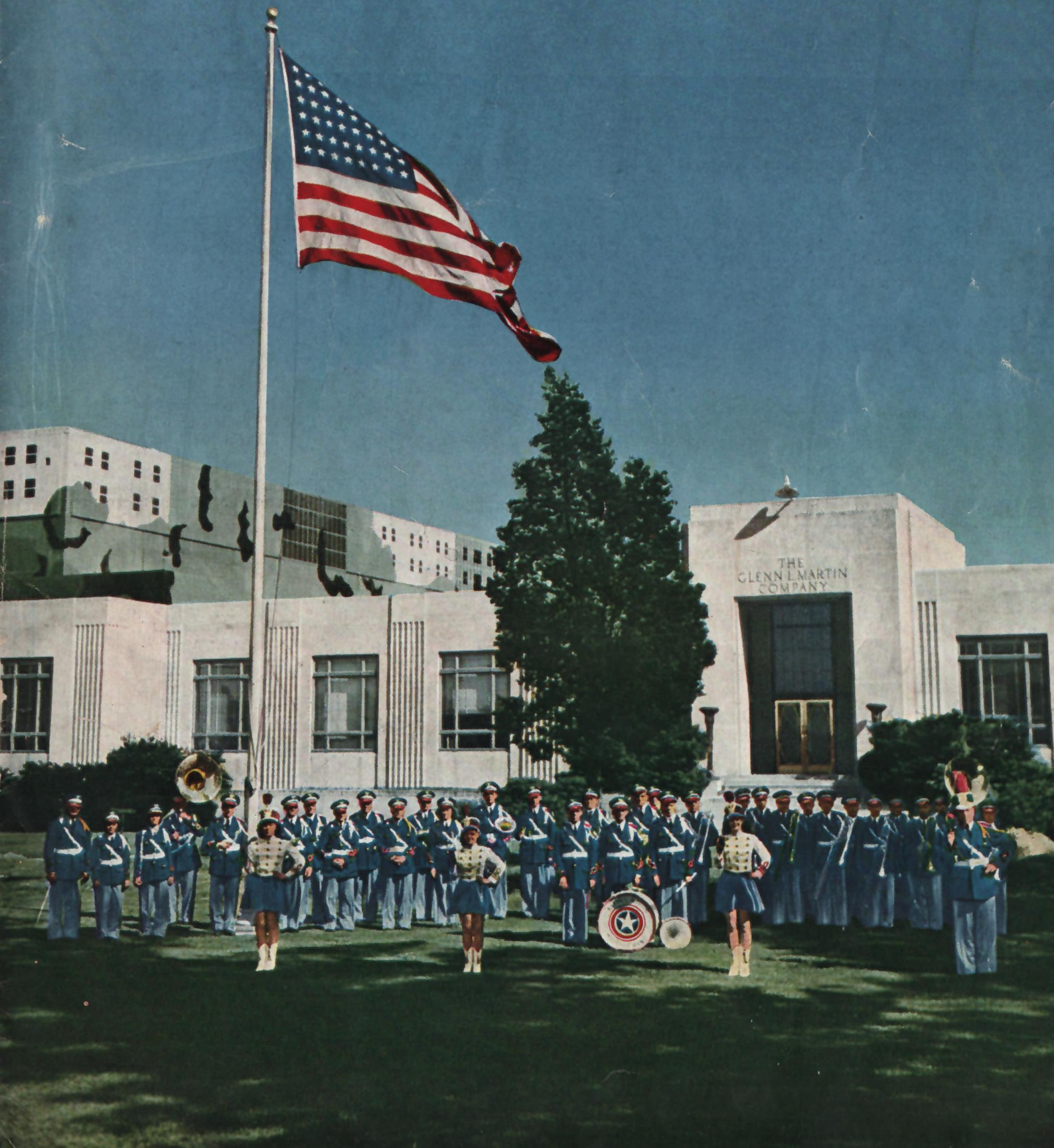
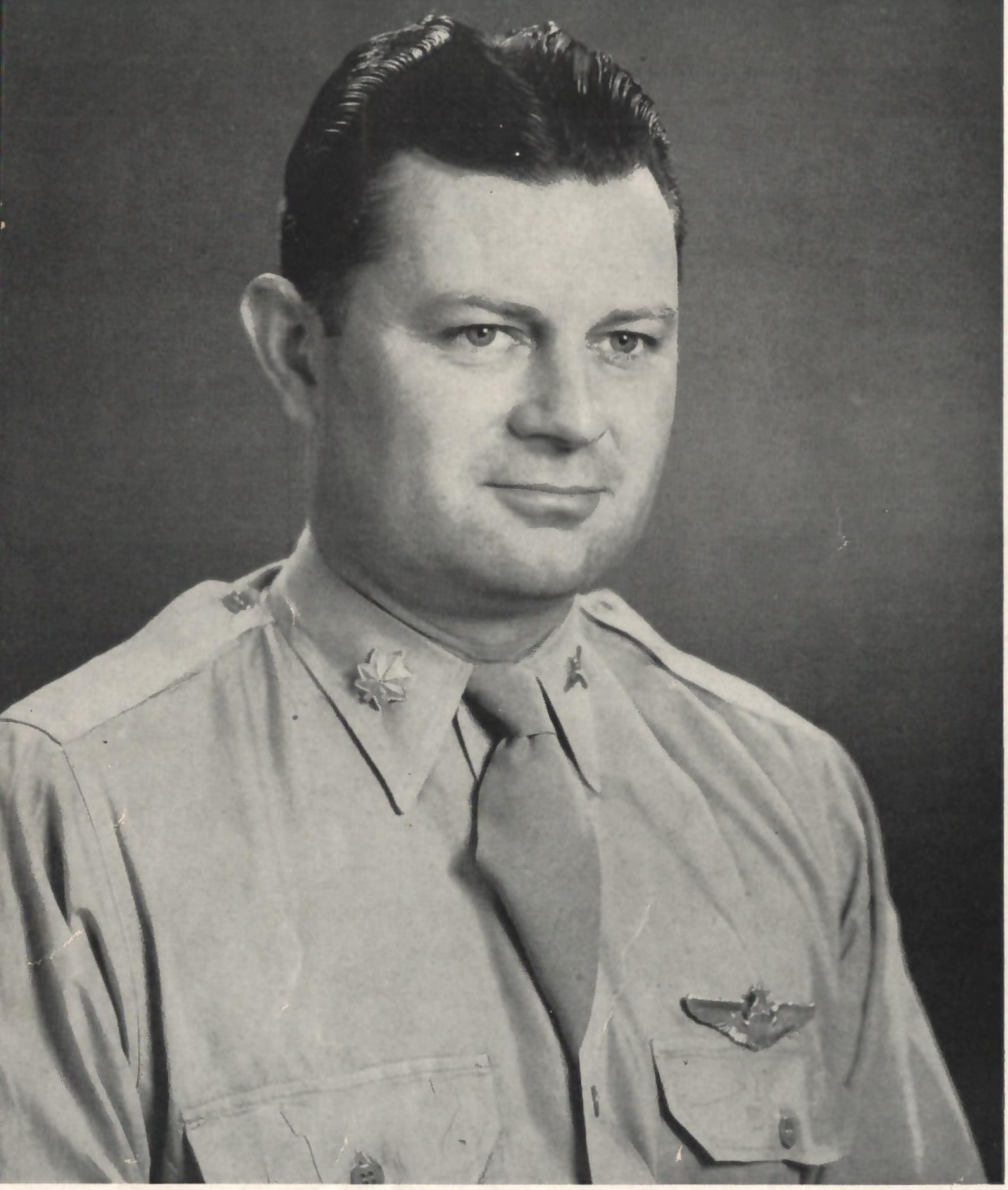
THE MARTIN STAR

July 1944





Lt. Col. Beverly H. Warren

Speeds New B-29s

WHEN Lt. Colonel Beverly H. Warren was a kid down in Plainview, Texas he had little idea that some day he would be the Army Air Forces Representative at The Glenn L. Martin-Nebraska Company, responsible for the production of the B-29 Super-Fortress, that is today playing such an important part in our air offensive.

In fact, Colonel Warren flew the first B-29 to the Martin-Nebraska plant last winter and now his days are one continuous series of conferences, phone calls, interviews and quick decisions. But he does get out from the office whenever possible to his first love—flying.

And he has flown almost every type of plane in the Army Air Forces. With the exception of the newer pursuit models—he has piloted them all. From the primary trainers he handled in his student days down at Randolph and Kelly Fields in Texas, to B-26's, B-17's, B-24's, B-29's, he knows the answers.

His job at Martin-Nebraska is to speed the production of airplanes. Through his vision, knowledge and cooperation with Management and Personnel, the record of Martin-Nebraska production—on schedule for the past 18 months—is one of the finest in the United States. As AAF representative, it is his duty to see that the contractor lives up to the terms of the contract and to assist the contractor in every way possible. This he does with efficiency, fairness, skill and understanding.

Born May 1, 1911 in Plainview, he made the Lone Star state his home until he entered the Army Air Forces in 1935. Col. Warren spent two years in Wayland college in Plainview and had both his father and mother as instructors. Finishing his first two years at Plainview, he matriculated at Baylor College at Waco, Texas and was graduated when 19 with a bachelor of arts degree.

His next step toward his present position came in 1935 when he entered the Army Air Forces as a flying cadet. He completed a twelve month course; eight months at Randolph Field and four months at Kelly Field at San Antonio.

Since that time, he has served with the Air Corps in many capacities throughout the south, middle-west and west. His first regular assignment was at Brooks Field at San Antonio with the Twelfth Observation Squadron. As assistant to the Commanding officer, he worked in Supply, Operation, Communication, Engineering and the like, learning the "ropes" of the Air Corps.

Colonel Warren's activities during the past nine years can be summed up with the listing of the chronological events leading up to his present station. The list reads as follows: February 15, 1936, rated airplane pilot in regular army; August 30, 1936, transferred from Brooks Field, Texas to March Field, California; September 11, 1936, assigned to 95th Attack Squadron, March Field; January 6, 1937, transferred from March Field to Barksdale Field, La.; March 1, 1937, rated airplane pilot and observer in Air Corps Reserve; relieved from duty at Barksdale Field and went to Randolph Field as a Flight Instructor; October 3, 1939, detailed to audit account of the Utilities Offices for Sales of Service; June 12, 1940, relieved from assignment and duty at Randolph Field and assigned to Kelly Field; June 13, 1940, authorized to proceed from station to Stearman Aircraft Division of Boeing Airplane Company, Wichita, Kansas to ferry planes to civilian flying schools; September 25, 1941, assigned as Assistant Air Corps Factory Representative at the Cessna Aircraft, Wichita; March 1, 1942, assigned as Air Corps Representative, United Airlines, Cheyenne, Wyoming; March 1, 1942, assigned Air Corps Representative, Continental Airlines, Denver; March 24, 1942, appointed member of the Board to select a suitable site for the location of the Modification Center at Cheyenne; April 15, 1942, appointed Purchasing and Contracting Officer for Army Air Forces at United Airlines Modification Center, Cheyenne.

On January 13, 1943, he went back to Wichita to District Headquarters of the Materiel Command and was assigned Assistant Technical Executive and Field Representative for the District Supervisor. In this position he traveled all over the Middle-West. And on February 27, 1943, Colonel Warren was assigned as Army Air Forces Representative at the Glenn L. Martin-Nebraska Company in Omaha. He is also Army Air Corps Representative at the Modification Center at Martin-Nebraska.

He was married December 18, 1942 to Miss Beatrice Beranek, formerly staff assistant in the Public Relations Office at Martin-Nebraska.

Well-liked and highly respected by all, Colonel Warren has but one thought in mind at Martin-Nebraska—to get B-29 airplanes to the Army Air Forces.

This he does—and does well.

MARTIN U.S.A.

THE MARTIN STAR

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The Victory March Is On!

As we pass another Independence Day, with our armies and navies locked in mortal combat, our national pride is at the full. Surely those heroes who bought our liberty with their lives must look down from their Valhalla with approval as our forces of freedom fight once more to preserve that heritage.

On every front the forces of oppression and tyranny are being beaten back by the inexorable legions of Democracy. The scope of the conflict is almost too vast to contemplate. In France and Italy our armies sweep on, leaving in their protective wake grateful peoples who know what it is to lose one's liberty. In the Pacific the iron ring of Japan is being dented deeply. Only where the Russians sweep westward, driving the German hordes before them, do we find no Americans. Elsewhere they are the spearhead of attack.

The Luftwaffe is in hiding. Japanese planes fall by the hundreds, their ships sink by the score before the onslaught. Again the Japanese mainland feels the thunder of American bombs.

The victory march is on. It is a long march, a bloody one. There are heartaches to come. There is much blood to be spilled. Our enemies will fight with the strength of desperation as their ill-gotten gains are taken from them.

We cannot cheer. We cannot feel exuberant. If our enemies are feeling our full might, we are meeting full might in return with every step nearer its concentrations. We can only feel pride and gratitude and hope.

In these perilous days, our hearts are with our men —our own flesh and blood. But it is good that we also be thankful that, even so far away, we are helping to protect them from harm; that we are helping them forward on that steady march toward the ultimate victory.

It is good to know that our Marauders are blasting open the paths ahead of our armies, just as they opened the beachheads of France and Italy. It is good to know that our Mariners stand constant vigil over the precious supplies without which our armies and navies could not go forward. It is good to know that our Baltimores are still in the fray, scouting, bombing, strafing the territories our men must traverse. It is good to know that our Mars and PBM transports are carrying the sinews of war and food and the letters of encouragement to our forces. It is good to feel that we have been selected to build the great Superfortresses which already have struck terror and destruction at the hearts of our enemies.

And it is good to know that at this very time our money is being thrown into the fray as the Fifth War Loan draws toward its close.

The race to the wire of victory is a gruelling one. Our fighting men will not be found wanting. Every nerve and sinew will be strained to the breaking point until peace is won. We at home must not be found wanting. There is much to do. Let us all be sure that, in our own way—whatever that may be—we will do our duties as well as our fighting men are doing theirs.

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The Ship That Flew From A Desert

"What's so surprising?" asks Glenn L. Martin

THE Mirage of Willcox Dry Lake continues to inviegle the unsuspecting with its water that isn't water, but that other mirage—a big Navy Mariner flying boat which was forced down on the barren Arizona desert—has continued its journey to San Diego following an unprecedented beaching gear take-off.

Named "The Mirage of Willcox Dry Lake" by a Navy salvage crew after the illusion on which it had landed, the 26-ton Mariner roared up into the air following a 2,300 foot take-off run, circled back to jettison its beaching gear before the lenses of a Navy camera crew; and then proceeded on to San Diego where she made a perfect landing, following an instrument approach, in the water from which she was normally intended to operate. Aboard the big flying boat on its flight were Lieutenant (jg) Leo A. Flynn, pilot, from Hedron 5-2 in Norfolk; H. C. Wertz, AMM1/c, flight engineer and plane captain, likewise from Hedron 5-2; Warrant Machinist Mel L. Ord, from Assembly and Repair, San Diego Naval Air Station; Paul Mittendorff, service representative of The Glenn L. Martin Company, and three desert mice taken on as last minute mascots.

Martin Not Surprised

Least surprised about the desert take-off was pioneer plane builder Glenn L. Martin, who said:

"It was a perfectly normal operation. It only goes to show what we have long maintained—that big flying boats are safer than landplanes in emergency landings on land. And I am perfectly serious when I say that we shall see the day when flying ships will land and take off on inland airports. I cannot discuss now the methods which will make that possible."

Mr. Martin, who built the first transoceanic commercial aircraft, the China Clippers, has long been a proponent of the large flying boat, "because they are inherently more economical and safer in case of emergency landings on land or water."

"There have been other recent instances of our Mariners landing on land without injury to the craft or the crew," Mr. Martin pointed out. "In such emergencies, in unfamiliar terrain, the pilot has the certainty that the boat will land smoothly, where a landplane's wheels might hit ditches or holes which the heavy boat keel would bridge. A landplane pilot customarily leaves his wheels up when forced to land on rough terrain, thus simulating the hull of a flying boat, but with less protection."

The only unusual thing about the Arizona take-off was that beaching gear was used, Mr. Martin said. Had the Mariner landed in a stand of green grass of a hayfield, the boat might have flown out without wheels, the grass acting as a lubri-

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Good Luck Symbol

Three lowly field mice were a symbol of good luck which gave the crew of "The Mirage of Willcox Dry Lake" added confidence as they prepared to take the giant seaplane off the desert emergency field in Arizona.

Recalling the traditional sea stories of rats deserting a sinking ship, Lieut. (jg) L. A. Flynn, USN, pilot of the history-making Martin Mariner, was happy to find the three mice attempting to board his ship a few hours before the takeoff.

The mice were caged and stowed aboard "The Mirage" for the trip to San Diego. Crew members quickly supplied the names, "Willcox Cutie," "Prop Wash" and "Happy Landings" for the desert rodents.

Now veterans of air travel, the three mice have a new home with the Navy.

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cant against the hull. Mr. Martin pointed out that he himself had taken float planes off grass with low-power engines as early as 1912.

The "Mirage's" flight was the final chapter in a story that began several weeks before when the "Mirage" lost an engine due to a torque meter oil leak during a ferry flight from the East Coast. Unable to continue on one engine due to the 4,200 foot altitude, Lieutenant S. S. Fitzgerald, then at the controls, brought the big flying boat in to a perfect dry land landing on the barren alkali flats of the Willcox Bombing and Gunnery Range. So perfect was Lieutenant Fitzgerald's landing that the PBM's hull was not even wrinkled and only slight damage was suffered by the starboard wing tip, wing float, flap and aileron. It was obvious that repairs could be quickly effected, but the nearest water suitable for a take-off was several hundred miles away and intervening mountains precluded the possibility of towing the big boat back to its natural habitat.

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The dry land landing and subsequent beaching gear take-off of "The Mirage of Willcox Dry Lake" is not the first instance in which Martin flying boats have demonstrated their ruggedness.

A few months prior to the Arizona operation, a Navy pilot set his Mariner down on the beach at night under adverse weather conditions. On that occasion the pilot didn't even know he'd missed the water until he called for soundings. The plane was dragged undamaged off the beach and put back into service.

During the early days of the war a PBM-1, smaller prototype of the present Mariner, piloted by Lieut. Joseph Jaap, landed on 12 foot seas to pick up survivors of a torpedoed British tanker.

More recently a transport Mariner landed in 15 foot seas in the Mid-Pacific to pick up 48 survivors of the S. S. Cape San Juan, and took off again after a series of six bounces, one of which hurled the plane 50 feet into the air.

One of the most dramatic incidents of all took place during a training operation when a student pilot bounced his PBM so hard that the second pilot's seat was sheared completely off, but the plane was otherwise undamaged.

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This proved no deterrent to the Operations officers at the San Diego Naval Air Station. Flying boats had been flown off hay fields with the grass acting as a lubricant for the hull, and while the desert in which the PBM had landed offered no stand of grass, the possibility of flying the airplane off from its beaching gear immediately presented itself to Lieutenant (jg) E. C. Miller, Crash and Salvage officer at N.A.S., San Diego, who presented it to Paul Mittendorff, Martin Service Representative then at San Diego.

Mittendorff endorsed the plan and put through a call to The Glenn L. Martin Company. Engineers went into consultation. The airplane could be stripped down to between 37 and 38 thousand pounds and still allow for sufficient fuel for the flight to San Diego. While only designed to handle the big boats during beaching operations, the beaching gear had a load factor of over 3.5 gravities. With slight modifications to prevent swiveling and perfect take-off conditions they should be able to withstand the stresses of a take-off run. Now if some provision could be worked out to jettison the gear after take-off, then according to the slide rule the undertaking was entirely within the realms of possibility. The Martin Company reported this to the Bureau of Aeronautics.

Details Worked Out

This endorsement was all that the men in San Diego had been waiting for. Mittendorff and Lieutenant Miller got together with Captain Rico Botta, commanding officer of Assembly and Repair and went over the weight and balance chart and proposed beaching gear modifications supplied by the company engineers. The Navy men added other suggestions and proposals of their own. Ensign J. A. Eikelman, Engineernig Officer of A & R at San Diego, was summoned into consultation, and together with Mittendorff worked out final plans for the beaching gear modification and release mechanism, which were then turned over to H. A. McComb, W. B. Paul, J. Driscoll and W. C. Junkin, civilian supervisors in the A & R shops, who handled the actual construction work.

Modification of the main gear included the removal of buoyancy tanks and weights and milling down of the forging which extended down between the wheels. Four bolts were inserted between the top and bottom sections to prevent swiveling, and a single long pin was substituted for the two short pins normally used to attach the gear to the hull in order to simplify jettisoning of the gear once the plane got into the air.

Additional equipment items including a bow cable to take up back pressure, steel tie rods to relieve side pressure and steel skis to fit between the wheels and prevent them from sinking into the sand, were prepared to meet special contingencies but were discarded as unnecessary complications prior to the actual take-off.

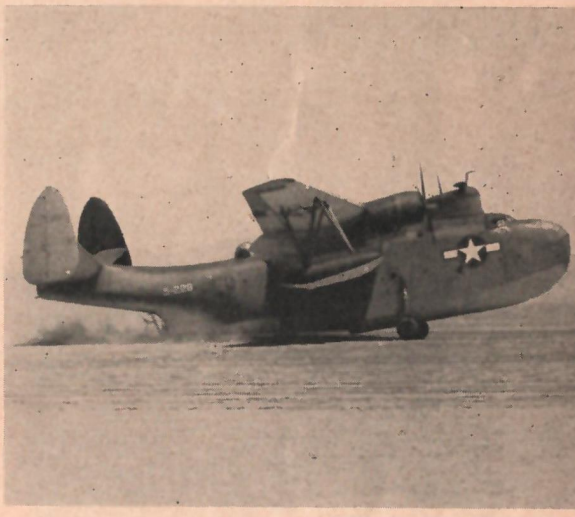
Steel Skid Used

The wheels and bottom section of a standard tail gear were removed and an 18 x 18 steel skid, turned up at the front like a toboggan, was substituted to add longitudinal stability and lower the tail, thereby increasing the angle of attack.

All that then remained was the release mechanism for jettisoning the gear, a must operation if the plane were to be

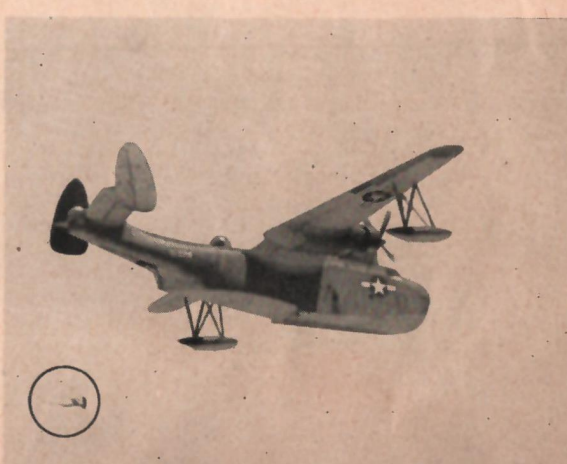
(*Continued on page* 16)

Under its own power, the "Mirage" comes out of the holes dug for the beaching gear.



Start of the take-off.

Air-borne!
The tail skid (circled below) is dropped. The main beaching gear had previously been released.



FIRST FOR HIM—100TH FOR SHIP: Tech. Sgt. K. L. Smith, crew chief on "Hell's Belle," stowed away on his ship's century mission over Calafuria, May 1. He had saved it from the salvage heap after a collision last August with an ME-109. He came back safely, naturally.

"Hell's Belle II" Was Really First 100-Mission Marauder

IT was the earnest eloquence of a 24-year-old crew chief that saved "Hell's Belle II," from the salvage heap after it had collided with a Messerschmitt on its twenty-third mission. Technical Sgt. Kenneth L. Smith won his point and his Marauder became the first anywhere to complete 100 missions.

When "Hell's Belle II" flew the century mission May 1 against Calafuria rail viaduct in Italy, Smitty was aboard as a "stowaway." Thus the Bedford, Pa., crew chief witnessed an historic event—and it wasn't many days too soon. From the rival English Theater four other B-26s completed their hundredth missions in rapid succession. Two of them. "Mild and Bitter" and "Bingo Buster" were the first two American bombers of any type in the E.T.O. to enter the select century-mission club.

Hit By ME-109

But there's something about Smitty and "Hell's Belle II," that gives them the edge. It was on August 22, 1943, over Salerno that his B-26 ran into a flock of Nazi fighters. The ME-109's were dropping like clay pigeons. One, on its way down, smashed into "Hell's Belle" and flattened the rudder and bent the entire tail section. But it made the trip home although it burned out both engines to do it.

The bomber was recommended for grounding. Pilots were hypersensitive about the difficult trim and the regular pilot recommended it be retired from active duty. Smitty went to bat for "Hell's Belle II."

"I guess I kinda talked them into it," he recalls. "There were still some peculiarities. But at that time we got some new pilots and not one of them noticed the trim being slightly off."

It has had only one complete engine change—and that due to the collision. Except for one generator, all original accessories are intact. All but one machine gun are the original 50-calibers. After Salerno, "Hell's Belle II" had trouble only once and that was during one of eight missions over Rome. Flak cut a fuel line and slightly wounded the pilot. The ship made an emergency landing in Corsica.

Trained At Martin School

Smitty entered the Army in October, 1941, and after training at Keesler Field, Miss., and the Martin Service Training School, he received "Hell's Belle II" when it had a mere 85 hours' flying time. It now has 724 hours and nearly 500 combat hours. It has dropped over 125 tons of bombs on enemy targets.

"Mild and Bitter," named from the English combination of beer and ale ("'alf 'n 'alf"), completed its string with a double-header on May 8. It struck at a secret target in the morning and bombed Evreux-Fauville in the afternoon for its hundredth mission. Capt. Paul Shannon, of Attica, Kansas, was at the controls for the historic flight.

"Bingo Buster" had Brig. Gen. Herbert Thatcher, Chevy Chase, Md., as pilot on its first mission, July 16, 1943, against Abbeville. The general is now deputy commander of the Marauder Wing of the Ninth Air Force and is one of the most decorated B-26 men in the war. The century mission was on Pas de Calais installations.

Complete Log

Here is the complete record of missions for "Hell's Belle II," first 100-mission Marauder of the war:

June 7 & 9	Pantelleria gun positions
11	Lampedusa harbor
15	Borizzo airdrome, Sicily
18	Olbia harbor, Sardinia
20	Trapani-Milo airdrome, Sicily
July 3	Capoterra airdrome, Sardinia
4	Gerbini airdrome, Sicily
7	Gerbini airdrome, Sicily
9	Piazza Armerina, Sicily
12	Agrigento, Sicily
14	Messina docks and railroad yards, Sicily
16	Vibo Valentia airdrome, Italy
17	Naples rail junction
19	Rome's Ciampino airdrome—first Allied attack
23	Aquino airdrome, Italy
Aug. 7	Angitola highway bridge near Pizzo, Italy
8	Angitola highway bridge
9	Other Pizzo bridges
11	Marina di Catanzaro railroad and road bridges
18	Punta di Stalletti tunnel entrance and highway
22	Salerno marshalling yards
Sept 7 & 8	Sapri bridge, Italy
9	Scanzano landing ground, Italy
11	Isernia road junction, Italy
13	Torre Annunziata road junction, Italy
14	Battipaglia-Eboli highway, Italy
15	Eboli-Serro road, Italy
17 & 18	Pratica di Mare airdrome, Rome
24	Avellino road junction, Italy
25	Ponte road bridge, Italy
29	Cancello railroad bridge, Italy
30	Capua railroad bridge, Italy
Oct. 1 & 3	Capua railroad bridge, Italy
5	Mignano road loop, Italy
6	Isernia road junction
14	Orvieto south railroad bridge
20	Montalto di Castro railroad bridge
21	Acquapendente road bridge
23	Marsciano railroad bridge
Nov. 2	Terni rail viaduct
26	Arezzo marshalling yards
28	Salon de Provence airdrome, Marseilles France
29	Guidonia airdrome, Italy
Dec. 1	Aulla railroad bridges
2	Arezzo marshalling yards
3	Guidonia airdrome
27	Recco viaduct, Italy
28	Centocalle airdrome, Rome
29	Bucine viaduct, Italy
Jan. 2	Var river railroad bridge, Nice, France
3	Bucine viaduct, Italy
6	Lucca marshalling yards
8	Roccasecca road bridge
13	Centocelle airdrome, Rome
15	Orvieto south railroad bridge
23	Valmontone rail junction
25	Terni marshalling yards
27	Ceprano road bridge
28	Orvieto south railroad bridge
Feb. 3	Civita Castellana railroad bridge
6	Orte railroad bridge
8	Montalto di Castro railroad bridge
9	Road junction in Anzio beachhead area
10	Troop concentration in Anzio beachhead area
15	Abbey di Monte Cassino
16	Orvieto north railroad bridge
17 & 20	Troop concentration in Anzio beachhead area
29	Viterbo airdrome
Mar. 3 & 7	Oatiense marshalling yards, Rome
8	Tiburtina marshalling yards, Rome
13	Sarzana railroad bridge
14	Prenestina marshalling yards, Rome
15	Cassino
18 & 20	Poggibonsi railroad bridge
21	Arezzo railroad viaduct
23	Florence's Campo di Marte marshalling yards
25	Mignano railroad bridge
26	Arezzo railroad viaduct
27	Poggibonsi railroad bridge
Apr. 1	Incisa railroad bridge
2	Fano railroad bridge
4	Orvieto north railroad bridge
6	Orvieto north railroad bridge
10	Poggibonsi railroad bridge
11	Bucine and Arezzo viaducts
14	Poggibonsi and Certaldo railroad bridge
20	Leghorn marshalling yards
28	Arezzo railroad bridge
29	Pontassieve railroad bridge
30	Arezzo railroad bridge
May 1	Calafuria railroad viaduct

600-Mile Winds Will Test Planes Models at Wright Field

A tunnel which will generate winds of over 600 miles per hour at temperatures as low as 67 degrees below zero is nearing completion at headquarters of the Army Air Forces Material Command, Wright Field, Ohio.

Completion of the new funnel-shaped, ten-foot tunnel will make possible testing of models of high altitude planes, both bomber and fighter types, with greater accuracy than has been possible before.

Presumably, the tunnel will be made available to aircraft companies for testing their new designs.

The tremendous velocity of the new tunnel will be made possible by using two 20,000 horsepower motors to drive huge fans, and by tapering the tunnel from its maximum cross section to a minimum diameter of 10 feet at the throat where the blasts will reach their highest speed.

Simulate 50,000-Foot Condition

Temperature and pressure conditions found at altitudes ranging from sea level to 50,000 feet will be simulated in the new tunnel. A storage type refrigeration system, moreover, can reduce the temperature of the wind to 67° below zero as it roars through the tunnel.

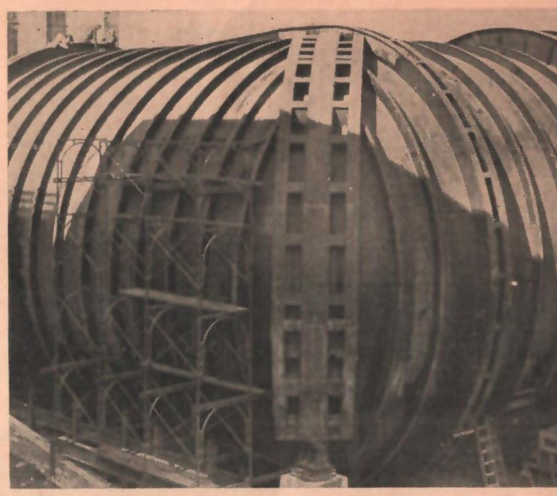
Supplementing the famous 20-foot tunnel here, which in its brief period of operation has won acclaim as one of the marvels of the Materiel Command's experimental laboratories, the new tunnel will permit tests of an entirely different nature.

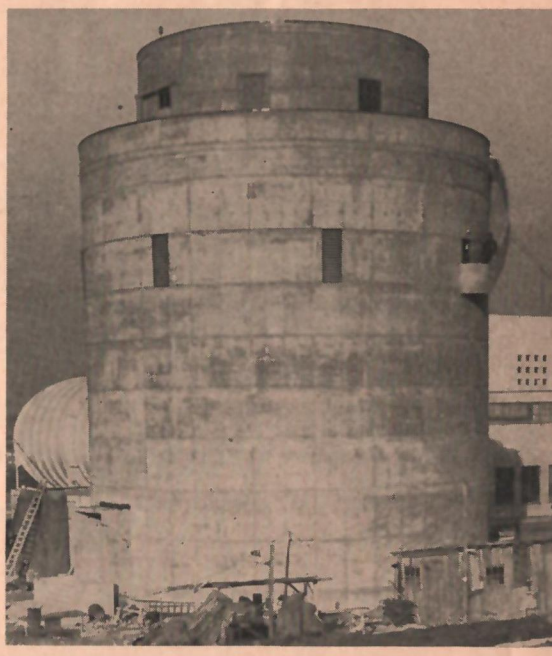
The older 20-foot tunnel is an atmospheric tunnel, highly valuable in testing aircraft and component parts under simulated sea level conditions. It was not designed, however, to reproduce altitude pressures or temperatures and, as a result, such conditions cannot be controlled.

The new testing tunnel, built in the shape of a long, narrow rectangle of the closed return type, is necessary to simulate extremely high altitudes in which today's fighters and bombers operate. Contant increase in speed of planes at higher altitudes has required the installation of the new structure. Greatly altered air flow conditions are confronted at high altitudes and, as a Materiel Command engineer remarked: "Entirely new test possibilities have been opened up. We have had no adequate facilities for testing models of planes and component parts under high altitude conditions."

Operation at a vacuum of less than one-eighth atmospheric pressure — approximating pressure conditions found at 50,000 feet, is one of the brilliant engineering features of the tunnel.

Important aircraft modifications necessitated because of high altitude operations, addition of armament, changes in cowling and other alterations, exert a direct influence on the speed of the planes and on changes in aerodynamic characteristics. Many such modifications made on AAF planes originate at Wright Field, and because of this, a wind tunnel capable of testing models of planes and parts suitable for high altitudes will be a boon to the work of the Materiel Command.





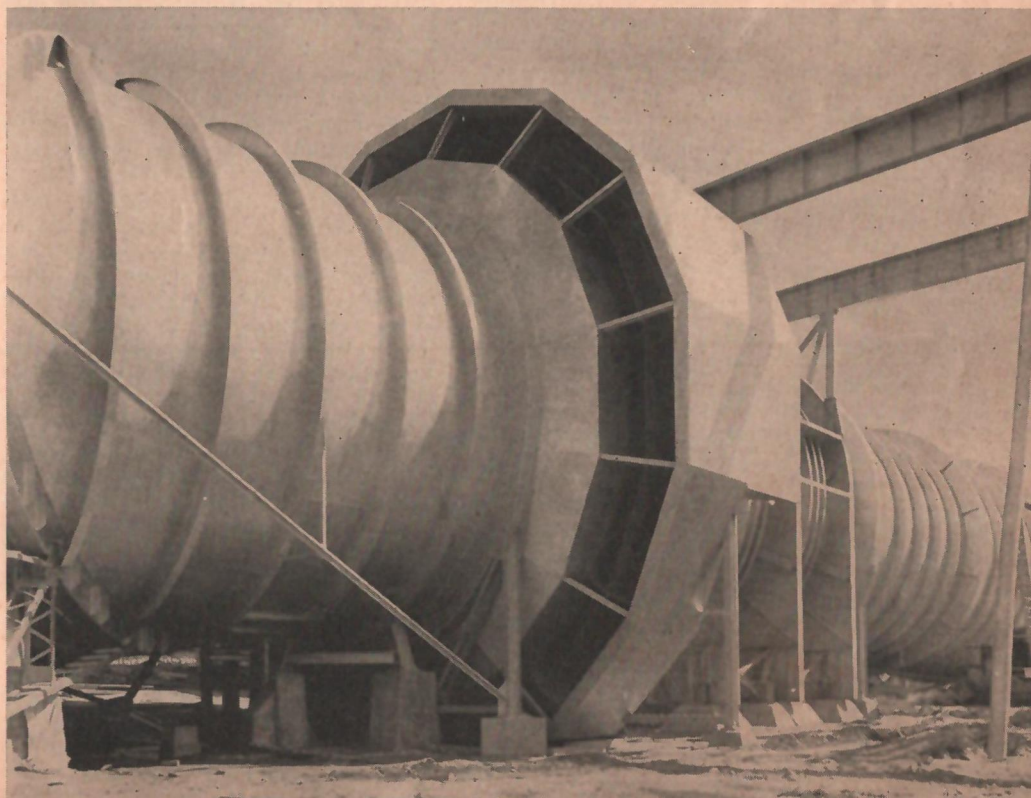
Top: The new 600-mile-an-hour wind tunnel in final stages of construction. Center: The vertical wind tunnel at Wright field, used in testing both parachutes and spin characteristics of planes. Bottom: The present 20-foot tunnel where models are tested.

Photos by AAF Material Command

VR-8 Squadron Now Flying Passengers

Transport Squadron VR-8 of the Naval Air Transport Service, Patuxent River, Maryland, is now carrying passengers in the big PBM-3 Mariners which it operates on a combined transport-training program. Tuesdays and Thursdays have been designated as the days on which passengers may be carried from Patuxent to Trinidad.

The new service, inaugurated April 15, is limited to flights assigned a full plane commander. In the first 15 days of the new service, according to the VR-8 Transportation Department Report, 300 passengers were carried on all flights, and approximately 145,000 passenger miles were flown. During the same period the squadron flew an additional 86,328 mail and cargo ton miles, an increase of 17,004 cargo and mail ton miles over the preceding 15-day period.



The B-29 Superfortress in flight.

Martineers Thrilled At Yawata Raid By B-29s Which They Helped Build

MARTINEERS in Omaha and Baltimore were particularly interested in the news of the June 15 raid of B-29 Superfortresses on Yawata, the "Pittsburgh" of Japan only 500 miles Tokyo. For both plants are contributing a large share in the production of the mightiest bomber the world has even seen.

The Glenn L. Martin-Nebraska Company is one of a number concerned with complete assembly of this Boeing four-engine air battleship, which carries a larger bomb load, has longer range, higher speed and greater service altitude than any other. The unique nacelles for the four 2,200-hp. Wright Cyclone engines are being built at the Army Division in Baltimore.

The Omaha plant began tooling up about a year ago and under the direction of its president, Joseph T. Hartson, has swung into production on the B-29. A $2,000,000 addition was recently constructed at that plant to assist in the program. Meanwhile the B-26 program ended with the completion of the final Marauder at Omaha on April 4.

Some months ago the nacelle project was assigned by the Army Air Forces Materiel Command at Wright Field to the Baltimore plant. A major section of the Army Division was cleared of B-26 sub-assemblies and put in order for the B-29 nacelles. In fact, B-26's are now being produced at capacity in half the space previously required.

This mighty aerial weapon has a wing span of 141 feet, is nearly 100 feet long and has an overall height of 27 feet. It is long and cylindrical in shape with slender and tapering wings. It has a single fin and rudder. The weight is supported by a tricycle gear with double wheels for the main gear and at the nose. Its nose projects well ahead of the wings.

The B-29 is flush riveted and butt-jointed externally throughout making the Superfort one of the cleanest of aircraft aerodynamically. It contains turbo-superchargers, flush drains, vents and high streamlining throughout. Its propellers are 16½ feet, just two inches shorter than those of the Mars. The B-29 carries 50-caliber machine guns and 20-mm. cannon for armament. Its engines are similar to those of the Mars.

Thus Martineers are joining hands with countless other major aircraft plants and sub-contractors in accomplishing the largest and most widespread program for a modern war weapon ever undertaken anywhere.

These giant bombers of the Twentieth Air Force gave an inkling of what lies in store for the Axis when a fifth of the steel production at Yawata was reported by the A.A.F. to have been "probably destroyed." Meanwhile in Nebraska and Maryland our own soldiers of production are playing their role in fashioning this weapon of world strategy for the Allies.

★ ★ ★

PBM's Are Justifying British MP's Jest

The story of the British M.P. who proposed in Parliament, after watching a single-engine demonstration of an A-30 Baltimore, that the second engine be left off future ships as an economy measure may soon be duplicated in this country about the PBM Mariner.

Since January 1, VR-8 of the Naval Air Transport Service has made 10 single engine approaches and landings varying in length from 50 to 300 miles with these big twin engined Martin flying boats. In 9 instances the Mariner came in without incident to its appointed destination. The tenth was the now famous Arizona desert landing in which the pilot was forced to set his big boat down on dry land from where it was later flown off from beaching gear.

New Aileron Will Increase Load, Safety

A lift dividend for post-war airline operators in the form of a new type aileron developed by Willem D. van Zelm of the Engineering Department has just been declared by The Glenn L. Martin Company.

Supplying the same degree of rolling moment as the conventional Frise aileron with a 35-45 per cent reduction in span, the van Zelm design permits a considerable lengthening of the wing flaps, thus increasing capacity load, or shortening take-off run and lowering landing speed. It also reduces drag caused by the gap between the conventional aileron and the trailing edge, tends to prevent ice formation in this gap, and is extremely simple to fabricate.

The van Zelm aileron was designed as a result of extensive research into the reasons for the lack of effective force on the part of conventional ailerons. These studies revealed that the projection caused by the balance portion of leading edge of the aileron created a turbulence in the air beneath the aileron resulting in a loss of effective roll and an increase in control force for angles of more than 15 degrees up.

Seal Gap

To overcome this obstacle the new aileron incorporates an auxiliary airfoil in combination with a seal closing the gap between trailing edge and aileron which smooths the air under the aileron when in an up position, and at the same time balances the aileron with a force in the direction of roll, permitting twice as much upward deflection as with the conventional type. The auxiliary airfoil or slat is extruded from aluminum alloy and is attached to the front or leading edge of the aileron with metal clips or plates. In the neutral and down positions it fits into a cut-out section of the trailing edge of the wing. Being a simple aluminum alloy extrusion, the auxiliary airfoil is easily fabricated, yet it does not add weight since it replaces the metal weights used in former ailerons to bring the center of gravity forward of the hinge point to prevent flutter.

The improved aileron assembly employs a top hinge for attaching aileron to trailing edge. This removes all restrictions on upward deflection while still permitting a downward deflection of up to 15 degrees, the same amount provided by the conventional center-hinged aileron, due to the cut-out section in the trailing edge. The top hinge also simplifies the problem of sealing the gap between aileron and trailing edge—an essential feature of the design necessary to provide smooth air flow.

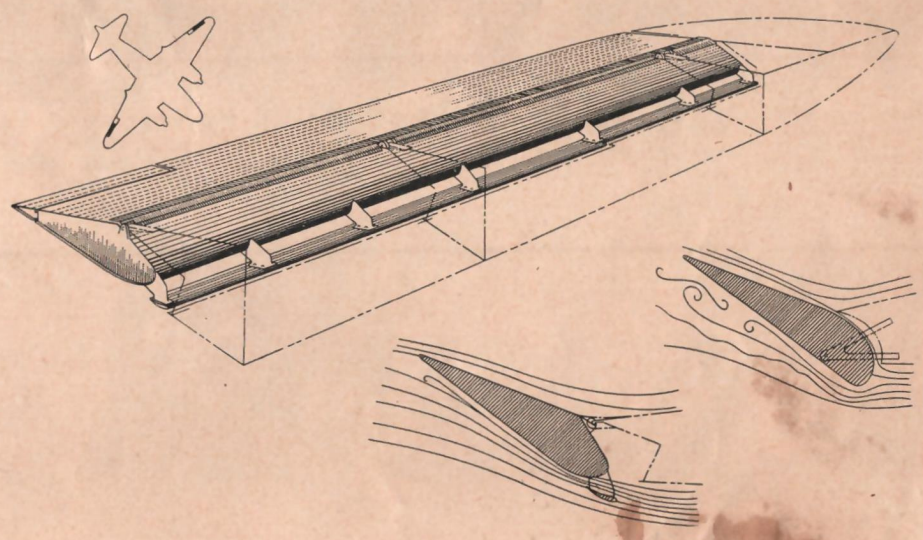
Seal Is Spring Metal Strip

The seal itself is a spring metal strip attached to the top of the aileron and running under a bulb section at the wing trailing edge. Since contact with the trailing edge is very close to the hinge line, friction is held to a minimum.

While the principal function of the seal is to provide smooth airflow in conjunction with the auxiliary airfoil, it offers the added advantages of eliminating drag—wind tunnel tests have shown that no drag results from irregularities at the bottom of the gap when the top is sealed—and tending to prevent the formation of ice in the gap which might lock the controls. The new aileron thus adds to safety as well as operating efficiency.

Still further advantages claimed for the new design include greater rigidity since the hinge line is at the wing surface, outside of the aileron contour, and the torque box nose is not cut; better balance through the elimination of the torque box carry-over structure reducing weight aft of the hinge; and lower fabrication costs due to the simplification of the internal structure.

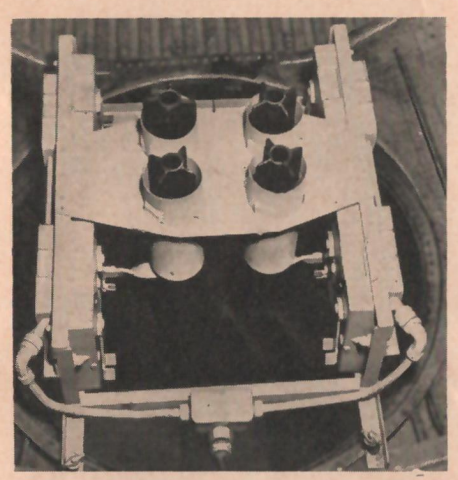
While not yet in production existing Martin airplanes due to the design changes and retooling this would require, the van Zelm aileron has been test-flown successfully on an experimental B-26 Marauder, and is being incorporated in designs for post-war commercial aircraft where its added lift will mean greater payloads and reduced operating costs.



2 Navy Men Perfect New PBM Bomb Rack

Shown installed in the tunnel hatch of a giant PBM-3 Mariner patrol bomber is a new miniature bomb rack for practice bombs developed by Electrician R. Cooley and Aviation Chief Ordnanceman N. C. Kukhahn under the general guidance of Lt. R. D. Gruber, O.T.U. Gunnery Officer at the Naval Air Station, Banana River, Florida.

So simple in construction that it can be easily manufactured by operating squadrons and training units from materials on hand, the miniature bomb rack



is operated in an identical manner to the main bombing system of the PBM. The conventional firing key or "pickle" may be used by either the bomber or pilot, and while the miniature rack is mounted over the tunnel hatch, the bomb bay doors open in the conventional manner before the miniature bombs are released.

Used to train student pilots and bombardiers for operational duties in the big Martin patrol bombers, the miniature rack is mounted horizontally at the tunnel hatch by means of two fixed flanges on the after end of the rack, while the forward end is secured to the tunnel hatch slots by means of a spring loaded hinge and held in place with dogs. Minor modifications of the Mariner's electrical system, requiring approximately one man hour, complete the installation.

The miniature rack holds 4 Mark 23 Miniature Practice Bombs, and is cocked manually with a special cocking tool.

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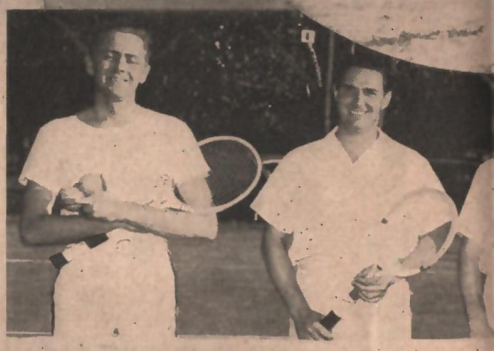

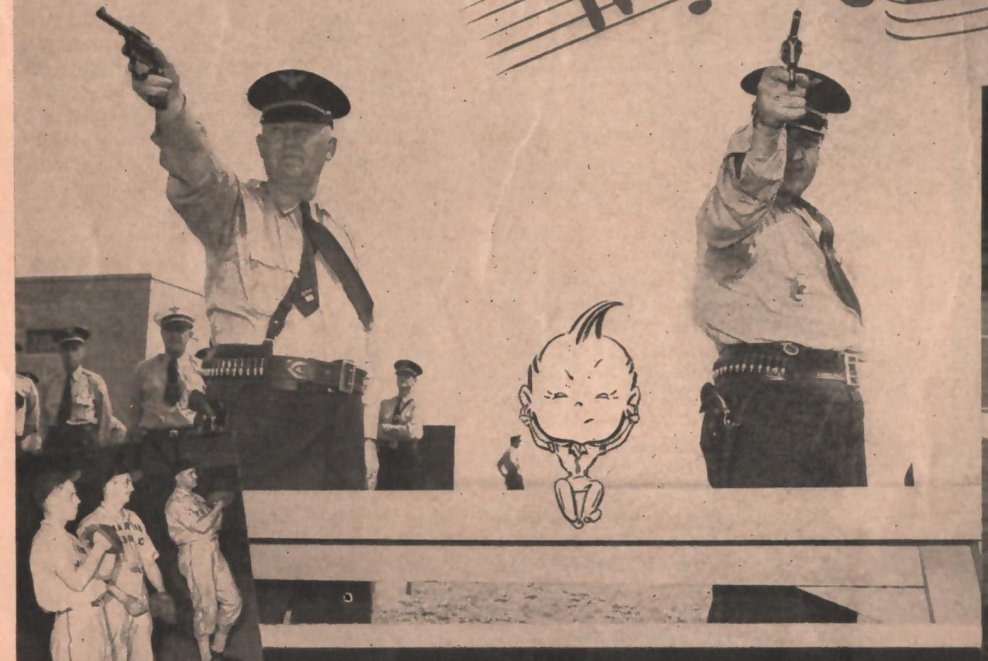

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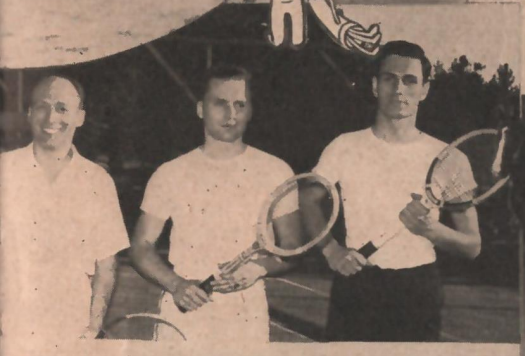


OLD SUMMER TIME

Photo Art

Handicapped Men Enjoy Their Work

Wm. Pearce, former elevator operator. now inspector in G. F. E. Receiving. Before the war, he did a flourishing business at the filling station he owned and operated.

MANY physically handicapped men and women work at Martin-Nebraska and are putting in a good day's work. In spite of their handicaps which are anything but that to them, they have lifted themselves by resolute will power to a place where they enjoy themselves, are self sustaining and are an asset to the company for which they work and the communities in which they live.

It has been the policy of The Glenn L. Martin-Nebraska Company to employ such men and women in those capacities for which they are best qualified. The Company has found that they are efficient workmen, loyal employees who honestly earn the wages they are being paid.

Found Work At Last

The Personnel Files include those who have lost an arm, leg, hand or eye. There are some crippled as the result of infantile paralysis or other illnesses. Recently, one man, who had been refused employment at 19 other establishments found gainful employment at Martin-Nebraska.

When men return from the war theatres wounded or otherwise unfit for further military service, they are oftentimes able to find employment at Martin-Nebraska. One Martin-Nebraskan, a hero of the raid on Dieppe, France, his left side shattered by a bomb explosion now wears a steel brace to support his back as he works at his machine in the shop. Another wears a steel brace as a result of a glider crack-up. These mentioned cases could be multiplied many fold with each doing a good job at his work.

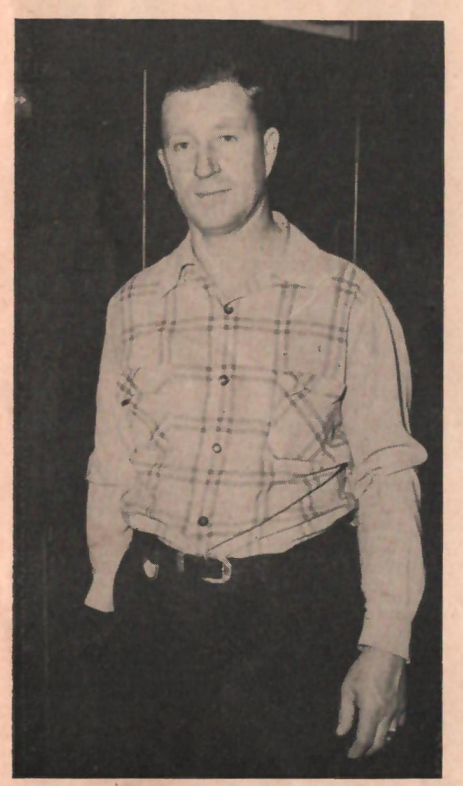
Shell Shock Victim

Lately, a few men suffering from battle shock have been employed. In a great many instances, steady and gainful employment has served to help them rehabilitate themselves. "Such a man should not be employed to operate a noisy machine," says E. M. Owen, Employment Manager. "He should not be put to work where there are bursts of activity or commotions. Sudden, unexpected noises are nerve-racking. Slack gives them time to brood. Preferably, they should be kept at employment where the work is steady and interesting to them. Work out-of-doors is the best employment. Wherever possible, we place these men in work that is agreeable to them."

A short biography of the following Martineers shows that each has overcome his handicaps. Each is now doing his share in the war effort.

Warren Kelley, 22, employed in the Cafeteria Stock Room for the past few months, lost his right arm at the shoulder when he was eight years old. "I was putting on a private rodeo on a ranch where

Warren Kelley, Cafeteria Store Room checking in supplies. He was a crack baseball and football player in high school.



"Chuck" Marinovic, elevator operator and once owner of a fleet of trucks before the war.

David A. Lyons, elevator operator. He likes strenuous sports.

I was studying near Cheyenne, Wyo. I jumped on a steer and was having a lot of fun until he threw me. My arm was injured and resulting gangrene necessitated its amputation." Kelley played football and baseball at Wheatland, Wyo. high school. His mother died when he was 13 and he worked his way through school and was all set for college when the war came on and changed his plans.

Victim of Gun Accident

Then, there is Charles "Chuck" Marinovic, operator of Elevator No. 4, who has been a Martineer for more than two years. When he was eight years old he was the victim of a "I didn't know it was loaded" accident with a shotgun and Chuck's left arm was amputated below the elbow. From the time he was nine until he was 23 he worked at the Field Club as a caddy and doing odd jobs earning his way through school. Eventually, he got into the trucking business and was doing nicely when the war changed his plans. His trucks were leased to the contractors who built the Modification Center and laid the large parking lot.

David A. Lyons, 22, operator of Elevator No. 1, has been a Martineer 14 months. David was the victim of infantile paralysis when he was about a year and a half old. The disease affected his hips leaving his leg muscles useless. David underwent 15 operations attempting to improve his condition. At first, he crawled and then got about on crutches. Finally, he decided he would do without crutches and threw them away. By sheer willpower he was able to do without them.

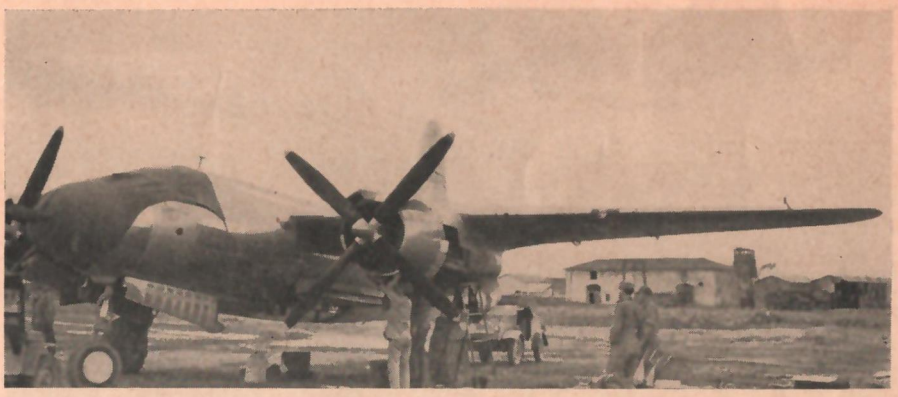
In Auto Accident

William Pearce, Inspection, F. G. E. Receiving, came to Martin-Nebraska in November 1942. He lost his left arm below the elbow as the result of an automobile accident in 1939. Before coming to the company, he operated a filling station in Omaha where he did all kinds of odd jobs. He waited on customers, changed tires and made repairs. He was doing a flourishing business when the war interfered and he came to the Plant and was employed.

A. S. "Shep" Taylor was an attorney before the war. When the war broke out, he enlisted in the Army Corps and received basic and advanced training at various air fields. When his training was almost completed, and he could see his commission in sight, a glider crack-up put an end to his career at an aviator. "Shep" is a Personnel Administrator at Modification.

Enjoys Sports

Dayle Isaacson was 12 years old when he lost his left arm in a corn elevator accident. However, that didn't prevent his growing up to become a husky young man, a splendid student in school and an athlete of great competitive ability. He is employed in Industrial Engineering and pitches for the softball team that represents his department in one of the Martin-Nebraska softball leagues.



A silver Marauder from the Martin-Nebraska plant gets a motor tuneup back of the lines in Italy.

A line of Marauders somewhere in Italy. By their trophy marks it is plain that they are veterans. The third ship from the left was assembled at Martin-Nebr.

Martin-Nebraska Built Marauders On Front Line

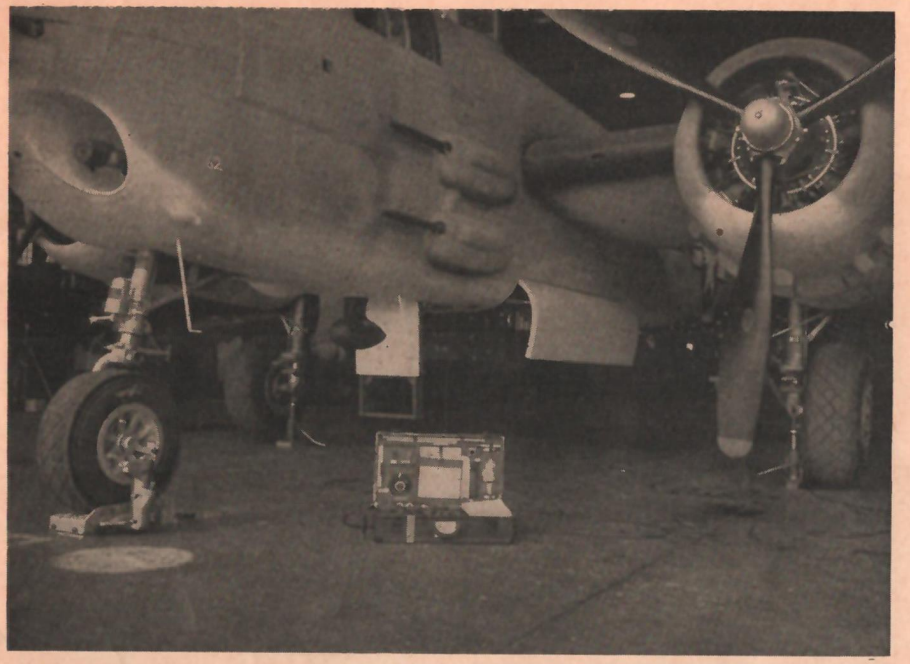
Martin-Nebraskans who have been assembling bombers may well be proud of the part they have played in the invasion of North Africa, of Italy and now of German occupied territory in France. Nebraska-built Marauders have been right in the thick of the fight throwing Sunday punches at the Axis in all war theatres.

The above pictures were received in Omaha by Betty Whitford, third shift, Wing Assembly Inspection, from Capt. Jack D. Angelman, U. S. Army Press Censor "somewhere in Italy" and were taken by a press photographer. The exact location was not given, but it is plain that they were up where the fighting was on. Betty and Capt. Angelman were fellow employees at the Solar Aircraft Co., in Des Moines, Iowa before he went to the army.

Betty sends Capt. Angelman our "Marauder" and "Star" and after he has read them he passes them along to his comrades. "All are impressed with the functions of your Education Department and the part women are playing in production as shown by our plant publications," he recently wrote. One soldier asked him, "Are those pretty girls real? It has been so long since we have seen anyone who resembled them."

In civil life Capt. Angelman was Employment Manager of the Solar Aircraft Company, a Martin-Nebraska vendor when the B-26 program was under way. The company furnished the manifolds, cowling and exhaust systems.

Joe Welden, first shift, Welding, traveled 35 miles by horseback to shoot this six-point elk in the Flathead National Forest. Welsen, whose hobby is big-game hunting was guided by Daryl Thompson, second shift, Modification, who used to live in that section of the country.



Each wheel of a B-25 rests on the device which is weighing the plane. In this process the center of gravity of the plane will be determined and the plane loaded accordingly.

Raymond Hook, Modification Engineering, in charge of weights and balance, Assisted by Bessie Lalich, check their weighing equipment.

Airplanes Weighed At Modification

When an airplane is being modified at the Modification Center, one of the requirements particularly specified by the Army is that the plane be weighed. This is not only for the purpose of ascertaining the total weight of the plane, but also because the modification changes affect the balance of the plane. In order to facilitate the flight of the plane, it must be kept on an "even keel," the same as the ship that sails on water.

In order to determine the weight, weighing devices—electric gauges—are placed on the jacking points of the airplane and by recording the vertical upward-acting forces, it is possible to find the one total downward acting force which, in this case, is the weight of the plane, and the position, relative to the plane of the center of gravity.

This center of gravity is limited to a fore and aft travel. If it falls outside the limits, the plane is out of balance and becomes nose or tail heavy. It is of the utmost importance that the center of gravity be determined, for after modification, the plane will be loaded with equipment of various kinds and of considerable weight. In relation to the known center of gravity, the plane can be loaded in such a manner that it can be kept in balance. This is also valuable information for the members of the crew that will man the plane as they can place themselves in such a manner as to aid in the plane's balance.

Weighing is done with an electrical kit. Raymond Hook, Modification Engineering, is in charge of weights and balance control. Assisted by Bessie Lalich, he operates the weighing machines. All modification changes are incorporated in the weight and balance records of each plane weighed. After the plane has been weighed and the center of gravity determined, instructions go out for the packing of cargo in such positions that will maintain safe flying limits.

★ ★ ★

Meeting Notes

Frozen and perishable foods, delicacies like orchids, will provide commercial aeronautics with an opportunity for a boom, if reasonable prosperity continues, Glenn L. Martin said at the post-war forum of the Maryland Aviation Commission. He declared there is no reason for pessimism regarding post-war prospects.

Rear Admiral Dewitt C Ramsey, chief of the Bureau of Aeronautics, said that "the Navy is proud to state that by the end of this year the workers in the vast plant at Middle River will be producing almost entirely for Navy contracts."

A Lot Of Soldier

Big Jim Monday, who stands six feet seven and a half inches in his army uniform visited the Baltimore plant recently and was greeted by former co-workers.

Before joining the army several weeks ago, a party was given and he was greeted by his former co-working in Internal Transportation, Splice and Surfaces. He was sent to Sheppard Field, Texas, for his basic training and is now a member of a ground crew in the 19th Aviation Squadron with the rank of corporal.

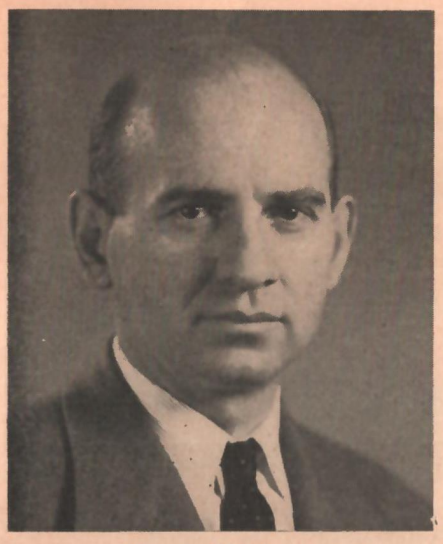
Jim told his friends he liked the army, although his shoes and clothing had to be specially made for him.

STORK DEPARTMENT

★ Mr. and Mrs. Herb Kaufman (Tool Engineering) a girl, May 13 ★ Mr. and Mrs. Warren Adams (Tool Inspection) a girl May 3 ★ Mr. and Mrs. Leonard Godown (Trailing Edge), a son, May 17 ★ Mr. and Mrs. V. J. Krebsbach (Final Assembly), a girl, May 11 ★ Mr. and Mrs. Ray Marx (Final Assembly), a son, June 1 ★ Mr. and Mrs. James Loveless (Tool engineering) a girl ★

Orange Blossoms

★ Ruth Luise Koch (Production) to Delbert L. Christensen, June 10 ★ Elva Johnson (Telephone Eng.) to T/Sgt. Albert D. Inman, May 3 ★ Helen Case, (Production) to Robert Howe (Material Control) June 3 ★



Marvin Hudleson

Martineer Band Director Is Experienced Musician

To have his bands compete in national band contests is nothing new to Marvin Hudleson, director of the Martineer Band of more than 40 pieces. After months of rehearsals, the Martineer band has recently appeared publicly on several occasions and has given splendid performances and is now booked for more engagements during the coming weeks.

Hudeson has had many years' experience as a trumpet player and soloist and band director. He has played with the Omaha Post American Legion, the Council Bluffs Union Pacific band and with the Veterans' of Foreign Wars organization. During his college years he directed the Cotner College band at Lincoln, Nebraska and following graduation, trained and directed bands at Dunning, Iowa; St. Paul, Nebr., and then went to Onawa, Iowa, where he taught the band for seven years.

His marching band at Onawa won three state contests and received first prize at the national contest held in Omaha in 1938. During the first Golden Spike Celebration sponsored by the Union Pacific railroad, his band entered the band contest and won second place and $50.00 prize money.

Hudleson is employed by the Martin-Nebraska Company in the Photo-Art department.

★ ★ ★

Prisoner of War

Sgt. Clifford W. Buntz, tail gunner on a B-24 is being held as a prisoner of war in Germany according to word received here at the plant. In March, a report had been received that he was missing in action. Before joining the army, Buntz was employed in Ground Test where he was a Martineer for several months.

Benny Shoots 'Em At Martin-Nebraska

One Martin-Nebraska who really gets a kick out of her work is Antonette Benal, more familiarly known as "Benny" of the Photo Art Department.

The only woman photographer of the department, she travels throughout the Plant with her Speed Graphic "shooting" pictures of Martineers and their work. She finds all people to be interesting but especially so when they are having their pictures taken. Some are shy, some are flustered, some are very particular about their appearance and some are matter-of-fact about it—but she believes that they all like the click of the shutter and the flash of the bulbs.

A photo finisher before she came to Martin-Nebraska, Benny still does that work in addition to her picture taking. She started snapping pictures in January of this year when the need for additional photographers became acute in the department. She enjoys war work and feels that she is doing something to help her brother, T/5 George Benal, an engineer in the army in the New Guinea area with 28 months' service.

Benny has been a Martineer since January 11, 1943 and admits that she was a bit self-conscious when she first started out on picture assignments. Now pictures are just a part of the day's work.

★ ★ ★

Lost In Action

Lydia Ambrose, third shift Rivet School Instructor, recently received word of the death of her son, S/Sgt. Emil Ambrose, a waist gunner on a Flying Fortress in a raid over Brunswick, Germany. Sgt. Ambrose was first reported missing January 30. He was an ex-Martineer having worked on third shift, Final Assembly.

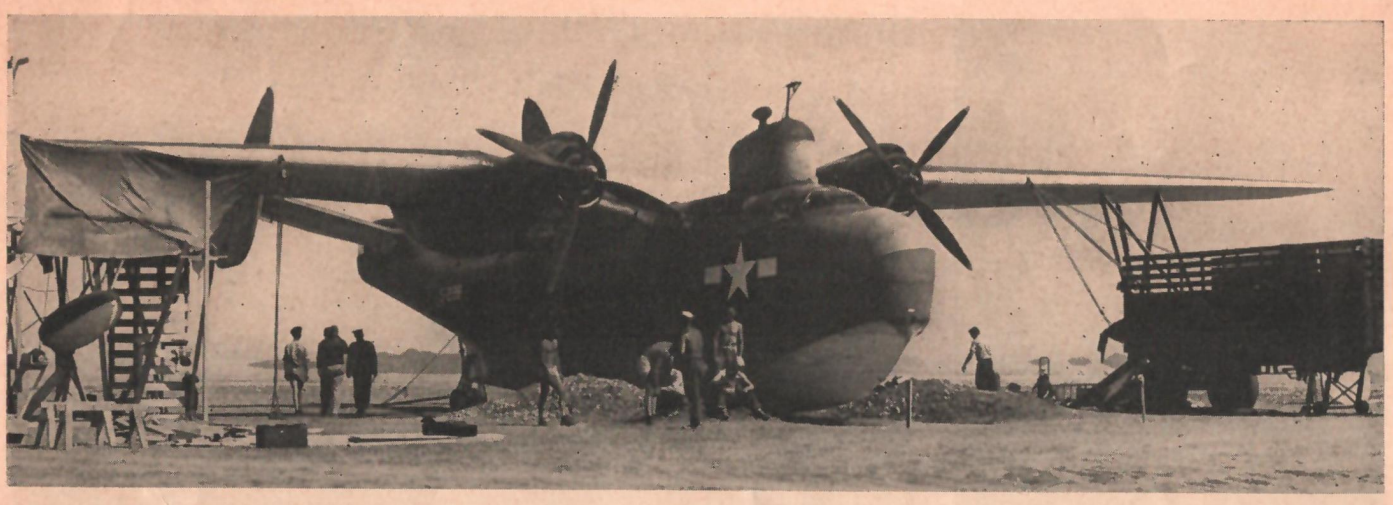
Carmen Hooser

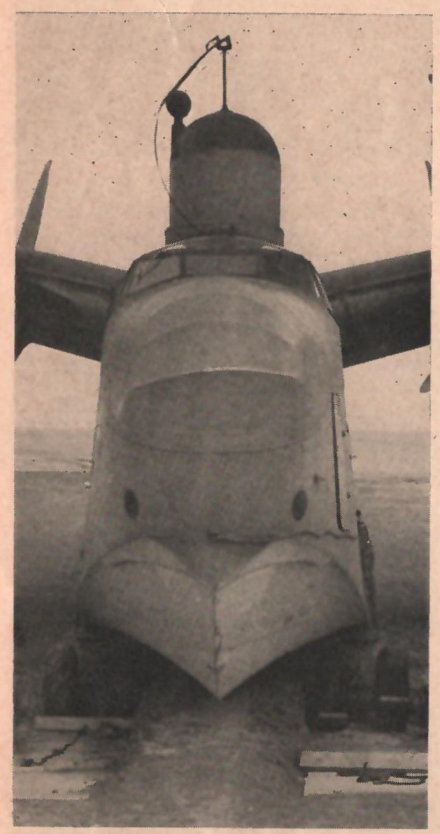
Modification Martineer Does Lots Of Heavy Work

At the Modification Center at Martin-Nebraska, a little woman does most of the heavy lifting. When there is anything about the place too heavy to lift by hand, a call goes in to Material Conservation and Carmen Hooser is sent to do the job. Of course, she takes along the gasoline, 2,000 pound Fork Truck she operates on the first shift. She is the only woman doing this kind of heavy lifting at the Center.

She is called on many different types of jobs each day. At one she will lift and haul away some heavy oil barrels. In another department, it will be a load of salvaged materials and in another a heavy steel beam. When not lifting heavy loads, Carmen works at a bench in the department. She has been at Martin-Nebraska since September, 1943 and likes the type of work she is doing.

ANTONETTE "BENNY" BENAL





At top: General view of the "Mirage" while being prepared for its take-off. Above: Head-on view showing how holes were dug to accomodate beaching gear. Bottom left: Close-up of main beaching gear release; right: special tail skid built for the take-off.

Ship of Desert

(*Continued from page* 5)

landed in the water following its flight. Unwilling to take any chances on this important detail, Mittendorff and Ensign Eikelman pressed another Mariner, then on the beach for bottom overhaul, into service, mounted the gear on this stand-in, and went through the actual jettisoning operation. These experiments revealed that a 1,500 pound pull was needed to draw the pin attaching the gear to the hull under static conditions. Since even greater forces could be expected in flight, a system of levers was worked out to enable one man to exert a pull of 6,000 pounds from inside the hull.

While Mittendorff and the technical experts of A & R worked out the engineering details, Lieutenant Miller gathered together the necessary equipment and rounded up a salvage crew which included two civilian metalsmiths, a civilian carpenter, two aviation metalsmiths, five machinists mates, an electrician, an ordnanceman, a radio technician, a warrant machinist, two mess cooks, two truck drivers and a pharmacist's mate.

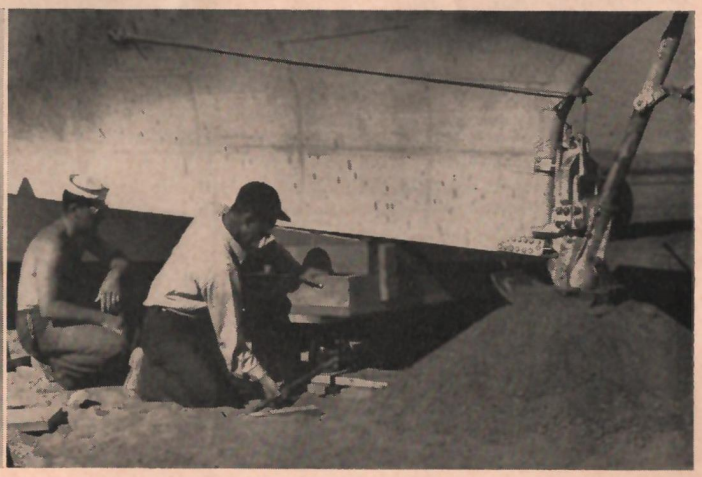
An experienced pilot for the undertaking was located in the person of Lieutenant (jg) Leo A. Flynn, a veteran big boat man from Hedron 5-2, the PBM acceptance and delivery unit in Norfolk, who, together with his flight engineer, H. C. Wert, AMM1/c, had been temporarily assigned to the Alameda Naval Air Station as an instructor, and who readily volunteered for the mission.

Headquarters Set Up

By Friday, May 11, the preliminary details had been completed and pilot, Martin representative and salvage crew with the exception of the two truck drivers who were to bring the needed equipment overland, were flown out to Willcox Dry Lake in an R4D transport.

The Navy crew set up field headquarters at an Army Camp near the stranded Mariner and then blinked their eyes in amazement as Staff Sergeant Walter Hamilton, N.C.O. in charge, and a former Martin employee, presented them with a clipping stating that the big flying boat had already been flown out by Army pilots, leaving no other explanation for the PBM sitting out on the desert than that it was part of the ever-present mirage. Right there and then the salvage crew christened the big ship "The Mirage of Willcox Dry Lake."

On Saturday the truck arrived with compressors, replacement parts and other needed equipment, and the salvage crew turned to with a vengeance despite the burning desert sun and a wind that at times reached a 45 knot velocity. By 11 o'clock the port beaching gear had been installed and everyone from Lieutenants Flynn and Miller and Paul Mittendorff, the Martin representative, to the ordinary seamen turned to the back-breaking task of digging a hole for the beaching gear and lining it with 2 x 12 planks.



By 13:45 they were ready to start leveling the airplane. A block and fall was attached to the big Navy truck and run to a sling around the port wing while a second block and fall for snubbing was run from an Army vehicle to the leading edge mooring ring on the starboard wing. Ten men were then sent out on the port wing and withdrawn one by one as the ship approached a level position. A second hole was dug in the desert floor for the starboard beaching gear and this and the tail gear were installed. By 16:30 the first phase of the salvage operation had been completed—the flying boat was resting on its own wheels.

Workmen Attack Jobs

The following day the Navy's specialists attacked the job of putting the airplane back into flying condition. Metalsmiths under the supervision of R. K. Miller set to work repairing the wing and flap and replacing the damaged aileron, wing float, float struts and wing tip. Carpenter D. H. "Pop" Nethaway caused scaffoldings and float supports to appear with lightning speed. Electricians, Radiomen, Ordnancemen and Machinist Mates stripped the big boat of turrets and other combat equipment, while other Machinist Mates under the direction of Warrant Machinist Mel Ord pulled down and repaired the engine whose failure had caused the original landing. The Army cooperated by sending in a crane from Camp Davis Monthon in Tucson to lift out the turrets.

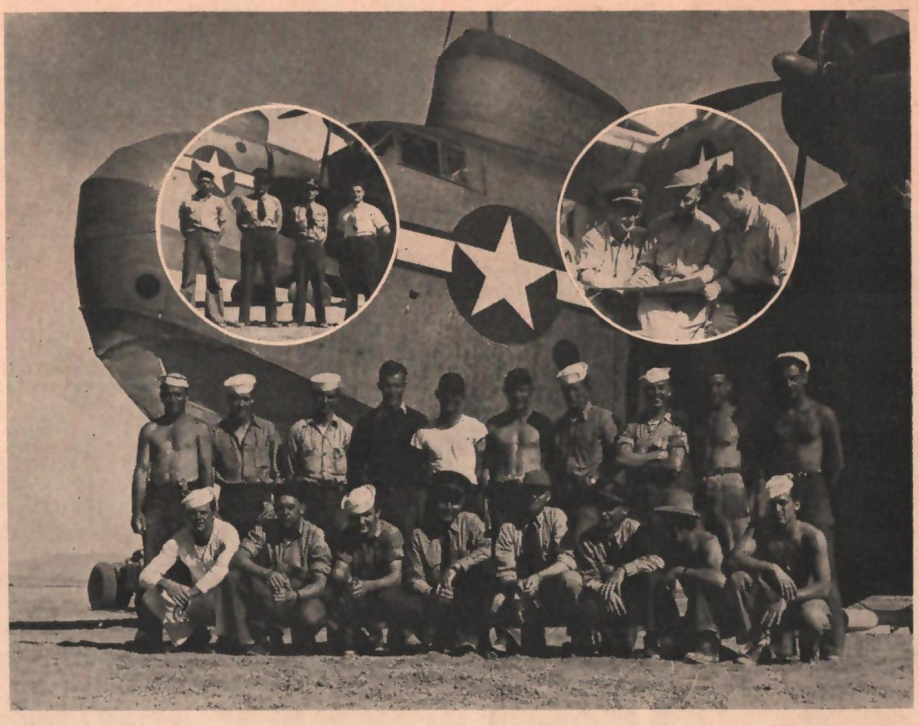
By Sunday, May 21, the repair work was entering its final phase. Every ounce of excess weight had been removed from the airplane. The port engine had been run up and tested. The metalsmiths were sealing up the final skins on the starboard wing. And overhead the one calamity that every man dreaded appeared imminent—rain. Storm clouds were gathering over the surrounding mountains, and even a light sprinkle would turn the spongy surface of the dry lake into a quagmire, making take-off impossible. The two Navy officers and the Martin representative studied the skies with fearful expectancy. After their many hours of patient work, were they now to be cheated out of their triumph by a trick of the elements.

Fates Relent

But the fates relented. Shortly, the skies cleared and soon thereafter the R4D returned from San Diego with Commander D. A. Sooy, Assistant Chief of Operations at N.A.S., San Diego, and a Navy photographic crew.

The men of the salvage crew continued in their belief that the operation was routine. During the course of the afternoon every single one approached Lieutenant Flynn requesting permission to accompany him on the flight.

By 16:00 when the crew knocked off for chow, the last rivet had been driven in the starboard wing, the aileron had been hung and everything was in readiness for the first big test—taxiing the giant flying boat up out of its desert hole.



JUST BEFORE THE TAKE-OFF — Their job completed, the Navy crew poses with the "MIRAGE." Left circle: Flight crew for the Beaching gear take-off. Left to right: H. C. Wertz, AMM1c, flight engineer; Warrant Machinist Mel Ord; Lieut. (jg) Leo A. Flynn, pilot; and Paul Mittendorff, Martin Service Representative. Right circle: Final details for flight are checked by Lieut. Flynn, Lieut. (jg) E. C. Miller, crash and salvage officer, and Mittendorff.

An air of excitement pervaded the mess hall that evening. The men weren't overly interested in their food and seemed anxious to get back to the plane. The calmest of all was Lieutenant Flynn, the pilot, who would soon be able to tell from the taxi performance just how the beaching gear could be expected to hold up. They were the one big question mark.

After chow the Navy men piled aboard an Army weapons carrier and headed for the PBM. Scaffoldings used in the wing repair were removed. The big Navy truck was moored to the flying boat's tail ready to hold back and keep the tail gear from crashing into the holes dug for the main beaching gear. Lieutenant Flynn and Machinist Ord warmed up the engines. Lieutenant Miller stationed his men around the airplane. Members of the Army detachment were pressed into service to guide the wings.

Comes Up Ramp

Lieutenant Flynn opened his throttles. The powerful engines roared and the big boat moved slowly up the ramp onto the desert floor. With the tail wheel two feet from the holes dug for the main gear, Lieutenant Flynn cut his guns. But someone had miscalculated. The ground gave way and the tail began to settle. Slowly it sank and came to rest on the ramp built for the starboard main gear. But it was all right. Everything was working out even better than expected. The line from the tail gear to the truck was cast off, and once again the big boat moved forward as Lieutenant Flynn opened his throttles. The engines blasted as he swung the nose and pointed it down the runway, then cut his guns.

As Lieutenant Flynn climbed from the cockpit any doubts he might have entertained had been dispelled by the taxi performance of the big Mariner. She'd behaved even better than expected. Now all that remained was to secure for the night and wait for the morrow. Wheels were chalked and staked. Mooring lines were run from one wing to the Navy truck, from the other to an Army ambulance. No use taking any chances on a sudden gust of wind undoing eight days painstaking work. Finally convinced that the airplane was tightly secured, Lieutenants Flynn and Miller and Paul Mittendorff, the Martin representative, headed for the barracks.

Monday, May 22, dawned clear and calm. The engineers had based their calculations on at least a 10 knot wind. The men on the scene were hoping for 25 knots—perhaps more.

Down at the plane they jacked up the tail, replaced the wheeled gear with the steel skid. The metal sections of the main gear were wrapped with felt to prevent hull damage during jettisoning. Fuel tanks were purged with carbon dioxide gas.

Spot For Photographers

Ten o'clock. Still no wind. The flight crew posed for pictures in front of the plane. Lieutenant Flynn took the camera crews down the runway, a 3,000 foot strip of desert sand which had been packed down with a heavy roller, and pointed out the spot where he expected to leave the ground.

Back at the plane the salvage crew

(*Continued on page* 18)

Ship of Desert

(*Continued from page* 17)

filled in the holes in the desert floor, began loading tools and compressors on the big Navy truck. Someone said "What if something goes wrong—we'll need this stuff!" The others just looked at him and went on loading.

Twelve o'clock and still no wind. Lieutenant Miller gives the order to secure for chow—roast beef, string beans, cabbage, potatoes and chocolate cookies. The men strip their bunks and pack their barracks bags. Then back to the plane. There's some wind now, but it's coming in gusts.

The flight crew climbs aboard "The Mirage"—first flight engineer Wertz, then Lieutenant Flynn carrying the three desert mice, next Machinist Ord, and finally Paul Mittendorf, the company representative who has been making a last minute check of the beaching gear. The camera crew sets up at the appointed spot down near the end of the runway, and is joined by most of the salvage crew as Lieutenant Flynn warms up his engines.

Then the chocks are pulled. Commander Sooy reads 20 knots on the anemometer in his hand and gives the signal. Lieutenant Flynn opens his throttles and "The Mirage" surges forward. But the ground is rough in front of the plane and there are no shock absorbers on the beaching gear, so he throttles back a little into a taxi run until he reaches smoother ground 300 feet ahead.

Then he gives her full power. "The Mirage" roars down the runway. She's still on the ground as she passes the waiting camera crews and they note with dismay that her flaps are still up and that her tail skid is ploughing a foot deep furrow in the desert sand. But Lieutenant Flynn knows what he is doing—he's a veteran with 2,650 hours in big boats—650 of them in PBM-3's. He has to keep the skid pressed down into the sand to counteract the torque of the two 1,900 horsepower engines and maintain directional control. The needle on the airspeed indicator creeps up to 50, 60, 65, then 70 knots—corrected for temperature and altitude that's a true speed of 82 knots or 94 miles per hour.

Then a shout goes up from the men on the ground who have been sweating the big boat into the air. "She's off! She's made it!" The first beaching gear takeoff in big boat history is an accomplished fact.

"The Mirage" circles out over that other mirage from which she took her name and sweeps back in over the cameras. Her main beaching gear have already been jettisoned but she drops her tail gear in front of the waiting lenses, then points her nose toward San Diego. Three hours later following an instrument approach, Lieutenant Flynn brings the big flying boat into a perfect landing in the water off North Island and taxis up to the beach where beaching gear are once more attached to her hull —only this time they are to be used for their intended function—beaching operations.

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THIS MONTH'S COVER

The patriotic motif of this month's cover is furnished by the American Flag which flies in front of the Administration Building, but the picture is enhanced by the Martin Military Band, directed by Jack Cary, which is grouped at the base of the flagpole. The band, complete with drum majorettes and the other gadgets of a modern musical group, is making quite a name for itself in and near Baltimore.

The photograph was taken in Kodachrome by Ed. Eisenmier.

★ ★ ★

Swimming Is Hobby of Martinette

Her loving cups, medals and ribbons are visual proof that Mary Clay, Photo Reproduction, is very proficient in her hobby of swimming. Mary won firsts in plunges, diving and 50-yard free-style dashes in Maryland and South Atlantic competitions, and placed second in the International Swimming championships held in Washington, D. C., in the late 1920's.

"I started to swim at Gwynn's Falls pool when I was 15 years old," says Mary, "and 'took' to the water immediately. I swam 10 yards on my first trial, and within a month had won silver and bronze swimming medals from the city."

Mary was the first girl in Maryland to qualify for the World Life Saving Corps, and she was among the first ten girls to receive the American Red Cross Life Saving emblem. She won many medals in Evening Sun contests, took part in swimming exhibitions at Bay Shore park.

INVASION!! Resplendent in its "D" Day stripes (applied the night before) a B-26 Marauder heads for France at the opening of the Western Front. These hard-hitting bombers again distinguished themselves in their support of ground troops when the French coast was hit last month. Some twenty vessels of the vast invasion fleet are seen below in the waters of the English channel.

"SOUP'S ON!"

The Army of Production, as well as the Army in the field, marches on its stomach, and a swell job of keeping the Martin Production Army well fed and happy is being done by the Cafeteria Department. In the nine cafeterias located in Middle River, between 55,000 and 60,000 meals are served daily and tempting dishes are always waiting when it's eating time. There are about 575 men and women who prepare and serve the food and just to give an idea of the amount consumed, 2,500 pounds of coffee are used every week. Meats, vegetables, etc., in proportion. Quite a pile of food.

Warehouse at the Airport. Those sacks of potatoes and boxes of vegetables will disappear rapidly.

Marian Lambdin, B Building, tests a roast. Even the picture smells good.

Peeling onions brings tears to the eyes of Betty Alter, C Building.

A pot of the favorite Martineer brew is made by Leoba Edell, C Building.

Thousands of pies are consumed weekly. Louis Workenfuss, baker in B Building, is shown with but a few of a day's output of shells.

Fruit and vegetable juices are always popular. Irene Schepf, C Building, fills the glasses.

If you like stew, this one being made by Myrtle Roberts, D Building, Second Shift, looks mighty enticing.

In these hot summer days salads are popular. Second Shift girls in D Building prepare the refreshing dishes.

One of the new gum and candy counters (this at Army Division) is presided over by Katherine Mosolivich.

Food train. Consuelo West guides the pony truck which hauls hot food compartments from one cafeteria to another.

FACTS FOR FUTURE-MINDED AMERICANS

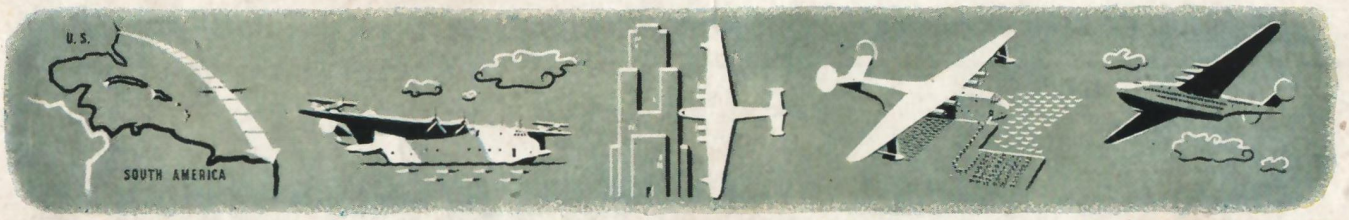
ABOUT THE MIGHTY MARTIN MARS

At some far-flung naval base, special equipment is needed . . . quickly. Big events are in the making; and the war can't wait while plodding freighters cross sub-infested seas. This is a job for the 72-ton Martin Mars, world's largest flying boat. Our Navy's answer to the cry of "more supplies . . . *faster*," the Martin Mars can carry 20 tons of cargo to the *farthest spot on earth* in 5 days or less. Now in regular service with the Navy, the Mars is the most efficient airplane yet built . . . per pound of material used, per horsepower and per gallon of fuel. Twenty more of these giant ships, each 82 tons, are now being built for the U. S. Navy.

Into the Mars went hard-won Martin knowledge gleaned from construction of the original trans-Pacific Clippers . . . the giant Russian Clipper . . . and the Navy's long-range patrol bombers. From the Mars have come further important findings which will lend added speed, safety and comfort to tomorrow's greater Martin airliners. The Martin Mars is doing more than help win a war . . . she's blazing the trail to a new and brighter tomorrow!

THE GLENN L. MARTIN COMPANY, BALTIMORE-3, MD.
GLENN L. MARTIN-NEBRASKA COMPANY—OMAHA

Martin
AIRCRAFT
Builders of Dependable Aircraft Since 1909



4375 Miles, Non-Stop from Maryland to Natal, Brazil, were flown by the Mars. She carried 16 persons, 13,000 lbs. of mail, broke many records. The Mars is powered by four 2200 h.p. engines.

From an Actual Photo of the Mars showing a standard sport plane on each wing, this gives some idea of her size. Mars' wings are so thick that crew can enter them to service engines while in flight.

If Stood on One Wing, the other wingtip would tower 200 feet into the air . . . higher than a 20-story building. Mars contains 7½ miles of wiring, 1.9 miles of piping, uses 24 interplane telephones.

150 Soldiers, fully equipped, could be easily transported by the Martin Mars. Her content of 16,665 cu. ft. is equivalent to the content of a 14 to 16 room mansion. When loaded, she draws 5 ft. of water.

Already Designed, 150 to 250 ton Martin airliners will someday succeed even the Mars. Martin engineers declare there is no practical aerodynamic limit to the size of over-ocean aircraft.